

ABSTRACT OF THE DISCLOSURE

A high withstand voltage semiconductor device, comprises: a substrate, a semiconductor layer formed on an upper surface of the substrate, a lateral semiconductor device formed in a surface region of the semiconductor layer and having a first principal electrode in its inner location and a second principal electrode in its outer location so as to let primary current flow between the first and second principal electrodes, a field insulation film formed inside from the second principal electrode in an upper surface of the semiconductor layer to surround the first principal electrode, a resistive field plate formed on an upper surface of the field insulation film to surround the first principal electrode and sectioned in a plurality of circular field plates in an approximate circular arrangement orbiting gradually from the vicinity of the first principal electrode toward the second principal electrode, the innermost one of the circular field plates being electrically connected to the first principal electrode while the outermost one is electrically connected to the second principal electrode, and the resistive field plate including coupling field plates which respectively connect adjacent ones of the circular field plates, and a conductive field plate shaped in a floating state right above spaces defined between pairs of the adjacent circular field plates, an interlayer insulation film being interposed between the conductive field plate and the resistive field plate or the circular field plates, and upon an application of voltage between the first and second principal electrodes, capacities being formed between the conductive field plate and the resistive field plate.